

## **REMARKS**

### **Administrative Overview**

Prior to entry of this paper, claims 35-54 are pending in the application. Claim 1 is the only independent claim under consideration.

All pending claims stand rejected as follows:

- claims 35-54 under 35 U.S.C. 112, second paragraph, as being indefinite; and
- claims 35, 37-39, and 42 under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 6,039,803 to Fitzgerald *et al.* (the “ ‘803 patent”).

Applicant notes with appreciation the Examiner’s finding that claims 36, 40, 41, and 43-54 contain allowable subject matter, if rewritten to overcome the indefiniteness rejection above and to include all of the limitations of the base claim.

Applicant hereby amends claim 35, as suggested by the Examiner. Support for this amendment may be found in this claim, as originally filed, and throughout the specification. No new matter has been added. Applicant submits that the claim amendment recited above duly complies with the requirements of 37 C.F.R. 1.116, and respectfully requests its entry.

### **Response to Indefiniteness Rejection**

Applicant has amended claim 35 to correct the indefinite language therein and respectfully submit that this claim, as amended, properly complies with 35 U.S.C. §112, second paragraph. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 35 and claims 36-54 dependent therefrom under 35 U.S.C. §112.

Response to Art-Based Rejection

Claims 35, 37-39, and 42 stand rejected under 35 U.S.C. §102(e) as anticipated by the '803 patent. Applicant respectfully traverses this rejection.

As a preliminary matter, Applicant confirms that he is a co-inventor of the subject matter disclosed in the '803 patent and reserves the right to overcome the above rejection in a manner prescribed in 37 C.F.R. 1.132.

Applicant respectfully submits, however, that a showing under 37 C.F.R. 1.132 is not necessary because the '803 patent fails to anticipate the subject matter of claims 35, 37-39, and 42. Specifically, Applicant notes that while the '803 patent indeed addresses the surface quality of the lattice-mismatched epitaxial layers in the semiconductor heterostructure, it simply does not teach or suggest a separate step of planarizing a surface of any of such layers, required by claim 35. Instead, the '803 patent discloses that "a substantial improvement in the surface roughness and dislocation pile-up densities as compared to growth on the conventional Si(001) on-axis substrates" can be achieved by "off-cutting (001) silicon substrates towards a <110> direction" by a certain angle prior to epitaxial deposition. See '803 patent, col. 2, lines 24-44 and col. 4, lines 54-56. Thus, the '803 patent offers an alternative approach to reducing surface roughness in the semiconductor heterostructure by adjusting surface morphology of the underlying substrate, rather than by planarizing the surface of the lattice-mismatched layer after the epitaxial deposition, as claimed herein.

Accordingly, Applicant respectfully submits that independent claim 35 is allowable over the '803 patent. Because claims 37-39 and 42 depend either directly or indirectly from this independent claim and include further limitations thereon, Applicant submits that these claims are allowable over the '803 patent, as well. Reconsideration and withdrawal of the rejections under 35 U.S.C. §102(e) are respectfully requested.

### CONCLUSION

Applicant respectfully submits that, in light of the foregoing amendment and remarks, all pending claims are in condition for allowance and request that the application proceed to issue. If, in the Examiner's opinion, a telephonic interview would expedite the favorable prosecution of this application, the undersigned attorney would welcome the opportunity to discuss any outstanding issues and to work with the Examiner toward placing the application in condition for allowance.

Respectfully submitted,



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